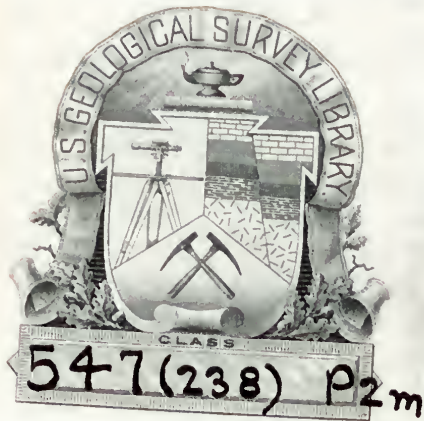


THE MAMMOTH CAVE.



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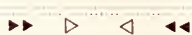
Pres.
Miss J. B. Johnson



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Penton

The Mammoth Cave Of Kentucky.



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MAMMOTH CAVE.

KENTUCKY'S GREATEST NATURAL WONDER.

↓
PROF. J. HOYES PANTON, M. A. F. G. S.

This marvelous subterranean palace in Edmonson County, State of Kentucky, U. S. A., is about 90 miles south of Louisville. It is readily reached by taking the Louisville and Nashville Railroad from Cincinnati or Louisville to Gasgow Junction, where a short line (9 miles) runs directly to the "Cave Hotel," on the arrival of trains. The Cave was discovered by one Hutchins in 1809, who at the time was pursuing a wounded bear, that had taken refuge in the Cave.

At first it was used for the manufacture of saltpetre, which in the war of 1812—14 became a very important product in the preparation of gunpowder, required at that time. It is said the income derived from it, in 1814 reached the sum of \$20,000. The war over, and better methods of making this substance being discovered, the Cave was no longer employed for that purpose, but became a popular resort and place of exhibition to tourists.

This immense cavern does not consist of one great room, but a series of magnificent chambers, beautiful avenues, etc., on five different levels. You enter on the second, and at different points along the way, go from one level to another, passing at times through marvelous chambers and tortuous paths. These have all been worked out of the sub-carboniferous limestone of the Cave since the Miocene period in geological history, by the

mechanical and chemical action of water, which in ages long receded into the past, as a stream threaded its way along channels long abandoned. No violent earthquake action rent the rocks asunder, but as the years rolled on, silently the solvent action of water asserted its power and left the monuments of its work we see in the Cave to-day. That nameless river threaded its way underground, and from time to time worked out lower levels until that was reached, now occupied by the present river in the Cave.

The work of the water, during the time referred to, may to some extent be understood, when we consider its effects as exemplified in the size of the cavern.

Here we see 223 avenues, 150 miles of which have been explored, 47 domes, one 300 feet high, 23 pits, one 175 feet deep, 8 cataracts, 3 rivers, 2 lakes and one sea.

The average width and height of the avenues is 21 feet, and the space worked out of limestone embraces 12,000,000 cubic yards.

Such is the great natural curiosity, wonderful, awful and sublime. Spring, summer, autumn and winter are unknown here, for one temperature, 54°, prevails throughout the year. Not a single ray of sunlight has ever penetrated beyond a few hundred yards from the entrance. Absolute silence pervades the cavern, and oppressive darkness holds sway in these regions of endless gloom; yet, as you travel it, you never weary, for the air is dry, cool, bracing, and many of the paths under foot are like an asphalt pavement.

Visit the Cave, and all other scenes you have ever witnessed become dwarfed in their grandeur, and you become convinced that the Mammoth Cave of Kentucky stands without a rival in its sublimity and awe-inspiring effects upon those who visit its wonders.

MAMMOTH CAVE HOTEL.

The hotel, of which the picture gives a good view is but a short distance from the entrance to the Cave. It is a commodious building, capable of accommodating 2—300 visitors. There are beautiful grounds with swings, hammocks and all that is suited to make a visit delightful. The management under Mr. H. C. Ganter is all the most fastidious could desire. A large hall-room furnishes ample space for those who spend a few hours in tripping the “light phantastic toe.” The scenery around it is beautiful and picturesque. Green River is but a short distance away at the foot of the hill on which the hotel stands, while in every direction attractive drives may be found. The country without the Cave is well suited for a summer holiday, but when you add to this the vast cavern underlying the whole, you have conditions impossible to be found elsewhere.

What can equal in wonder and surprise the magnificent chambers, marvelous halls, beautiful avenues, lofty domes and wonderful grottes, overhung with crystals of dazzling splendor; the terrible pits, fearful chasms and awful abysses shrowded in eternal gloom. The gloomy sea, crystal lakes and mystic river over whose waters come weird echoes from the dismal regions along its shores.

Until 1890 visitors were debarred the privilege of a sail on Echo River, owing to a rise of its water, which covered up the low archway at the entrance, but this difficulty is now removed as a new way, “Welcome Avenue,” has been opened up and, notwithstanding a rise of water in the river, it can be reached and the tourists enjoy the wonderful experiences peculiar to a sail upon an underground stream without a shore.

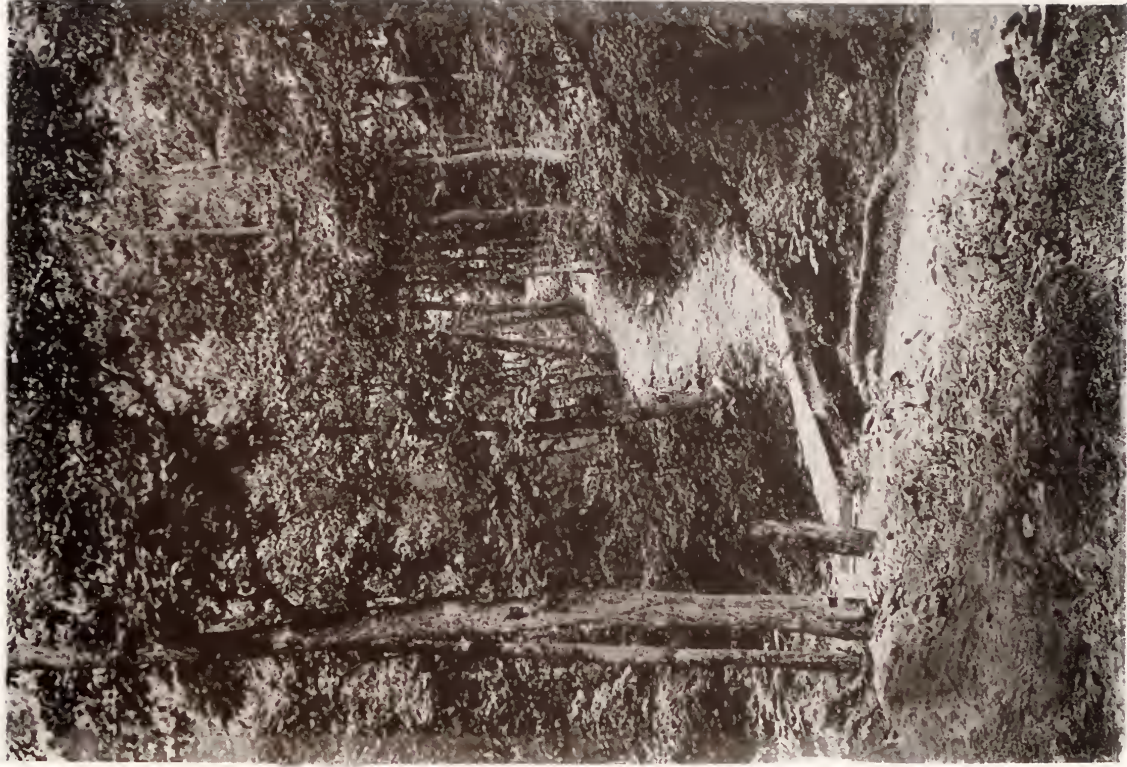


MAMMOTH CAVE HOTEL.

PATH FROM HOTEL TO MOUTH.

Leaving the hotel at 8 A. M. or 7 P. M. with a competent guide, according to whether you are going to take the Long Route (18 miles) or the Short (7 miles), each tourist supplied with a lantern, and the ladies dressed in bloomer style, sometimes of quite fantastic design, you proceed down the path in the direction of Green River. Look at the path in the picture, imagine you see, say fifty tourists coming down that meandering course, swinging their lanterns and filling the air with all the cheerful sounds common to a crowd, bent on having a jolly trip through the Cave, and you have a faint conception of the charming sight often witnessed along that way, among the trees and flowers. For about three hundred yards this path skirts the hillside and leads along under lofty trees, many of them with clinging grape vines, whose foliage add much to the beauty of the trees. Many species of flowers decorate the sides of the path and everything seems to charm the scene. Single file down the hill the party proceeds with the guide leading, and finally reaches the bridge, which is but a few yards from the mouth, 118 feet below the hotel and 194 above Green River.

A short stop is made at the end, so as to become somewhat accustomed to the air which at this point is probably 60° , while up at the hotel it may be $80-90^{\circ}$, and when further descent is made into the cavern 54° , is reached. Few scenes could be more charming than a walk down the hill to the Cave by night, when each tourist carries a light whose flickering rays stream among the trees, and make the whole a fairy scene.



PATH FROM HOTEL TO MOUTH.

MOUTH OF THE CAVE.

You are now at the entrance to the great Cave, 70 feet wide and 50 deep; at your side are the descending steps down which thousands of tourists pass each year, above you the lofty hills that border Green River, in front of you the noble archway of the picture. Let us stand and gaze at the entrance for a moment; it is decorated with flowers in purple and gold; mosses, ferns and lichens in every shade of green, cover the cold gray rocks; beautiful sprays of climbing plants dangle over the abyss below, while lofty butternuts and rugged oaks guard the entrance to the vast underground palace beyond. A little rippling stream issuing from a crevice above keeps up an incessant sound splashing upon the rocks below. It was this in all likelihood that opened up the present mouth and you cannot help but pause and see what it has effected in time. The birds singing among the trees and humming insects seem to fill the air with farewell sounds, as you enter the sunless regions of endless night and leave the world of sunlight behind for a day. Down 96 steps you descend passing the little noisy stream. You at once perceive a wonderful lowering in the temperature of the air which soon reaches 54° , and a rushing current issues past you from the cavern. This great Cave breathes outward for six months of the year (summer) and reverses the current for the remainder (winter.) At the iron gate where the true entrance begins the current is so strong, especially in the daytime, that it frequently blows the lights out.



MOUTH OF THE CAVE.

SALTPETRE VATS OF 1812-14.

In various parts of the Cave, within the first mile, vats are seen, those of the picture being at the Rotunda. Look at them! they are silent monuments of the busy days of 1812-14 when thousands of pounds of saltpetre was made from the soil or so called "petre dirt" of the Cave. This earth was collected and brought to hopperlike structures which hold from fifty to one hundred bushels; cold water brought by the wooden pipes into the Cave, was leached through these, and a solution of salts ran into the vats below. This was pumped into other pipes that conveyed the solution to the outside. After boiling it was run through hoppers filled with wood ashes and potassum, nitrate or saltpetre obtained, after allowing it to stand for a time so as to crystallize. From a bushel of "petre dirt" about four pounds of saltpetre could be obtained by the process described above.

Many miners were employed at this work, and it is said that some who undertook the work, though not very strong, became quite vigorous after a stay in the cave. The cold, dry, bracing atmosphere of the place has a wonderful exhilarating effect upon the system.

Those jolly fellows enjoyed the work, and for at least two years the enterprise was carried on with favorable results to the proprietors. The tracks of the oxen and carts employed are still seen in some parts and are pointed out by guides as points of interest. To the left of the vats are the remains of an old pump used in the work.



SALTPETRE VATS OF 1812-14.

WATER PIPES USED IN 1812-14.

A short distance from the Iron Gate which forms the true entrance, the visitor has his attention called by the guide to certain apparent logs, some on the floor of the Cave, others more elevated. The logs are really pipes 20 feet in length and about 10 inches in diameter fitted together; they were used in the early days, for carrying water into the Cave and also for carrying out the water after it had been passed through the hoppers filled with "petre dirt" from which saltpetre was made.

There is a marked difference in the condition of these logs; those through which water was conveyed are considerably decayed, while the others, carrying the lye obtained, are well preserved. While walking along the path in this part, the guide calls your attention to pick marks in the soil. You could believe they were made but a few hours before; and yet the old miners who thus left their marks behind them have long laid down their implements of labor to enter the sleep that knows no waking. Eighty years have passed since the walls at this part of the cavern echoed the voice of the laborers, who toiled beyond the reach of sunlight and led a life of labor in these darkened chambers. The pipes and other relics of 1812 are allowed to remain pretty much the same as they were left by those who used them. They give a romance to the Cave and afford considerable that is attractive to the visitor, besides illustrating how this crude mode of manufacturing saltpetre was carried on.



WATER PIPES USED IN 1812-14.

THE BRIDAL ALTAR.

A little over half a mile in, the visitor notices to the right a stairway of some 15 steps; if he ascends these, he will find himself in Gothic Avenue, one of the finest walks in the Cave, easy under foot and for a mile rich in spots of interest. About half way down you arrive at "Gothic Chapel" in which the "Altar" of the picture is found. This altar consists of several pillars, grouped so as to form arches. Here is probably the most romantic spot in the Cave; for the guide says that nine couples have been married at this spot. The first bride, it is said, at some time unfortunately promised her mother "that she never would marry any man on the face of the earth." In the course of time a young "cornercracker" made his appearance, and succeeded in showing her the folly of making such a vow. He indicated to her how she might in one way not break it, and yet succeed in meeting his wishes and her own feelings. She listened to his suggestions, came to this quiet place and before the unique Altar married the man of her choice "under the earth." In this avenue there are many places at which a skilful guide displays his knowledge and wit; and frequently succeeds in making visitors fill the avenue with echoes of the laughter he provokes by describing the attractive spots on the way; for it must be remembered, guides are allowed a good deal of latitude in description.



THE BRIDAL ALTAR.

OLD ARM CHAIR.

A pillar in Gothic Avenue, which bears some resemblance to a chair. Here Jenny Lind sat for a while, when she made a tour through the Cave. The seat is quite distinct and may well receive the name given. In this part of the Gothic Avenue are many stalactites hanging from the roof, but many have been mutilated by wanton visitors in the past, when the rules for the protection of the Cave were less vigorous than now. Stalaginites too, are common and as one of the guides said, "where these meet and form a pillar, it is *mighty tight*." When you look at the various forms of incrustations, formed by the dripping of water, containing a small portion of lime, which it dissolved in passing through the rock, you cannot but think that they indicate vast periods of time occupied in building them up, drop by drop. One large "mighty tight" in the Gothic Avenue is computed to have occupied at least some 960,000 years in its formation. When about to move on and continue the walk down Gothic Avenue, the guide quietly remarks, "that is a chair in rock and not a *rock in chair*." Beyond this lie several points of much interest, and the path suddenly seems to end with a great rock projecting over an abyss. To this the expressive term "Lover's Leap" has been applied, we presume on account of its suitability for such an act.



OLD ARM CHAIR.

MARTHA WASHINGTON'S STATUE.

In the main Cave, a little beyond the Gothic Avenue, a bend occurs that supplies conditions which taken advantage of by the skilled guide produce a wonderful effect. The guide at a certain point tells you to go on until you come to a board with the words "stop here;" then blow out your lanterns and when you hear him shout or whistle, look back. In the mean time he has gone back a distance. You are waiting at the appointed place—you hear the shout—look back and lo! you behold an apparent statue, which seems to be made of white marble and about 12 feet high. The scene is of surpassing grandeur and lasts as long as the blazing Bengal lights which he has ignited continue to burn.

This apparent image is caused by the bright light of his burning chemicals, streaming through between the walls at this point, where they give in outline the statue of the picture. It certainly is a wonderful phenomenon, produced in a very simple way, and frequently the loud appreciation of the visitors prevails upon the performer to repeat the operation. When the guide returns he tells you that the statue is that of Martha Washington. Very few can understand how this magnificent result is attained, but when they remember that it is simply light and not a solid object they are looking at, the problem loses much of its difficulty. Near this spot they have discovered that by standing in a particular spot with their lamps, the shadow of a man's bust may be produced from the outline of a projecting rock. To this the name of George Washington's Bust is applied.

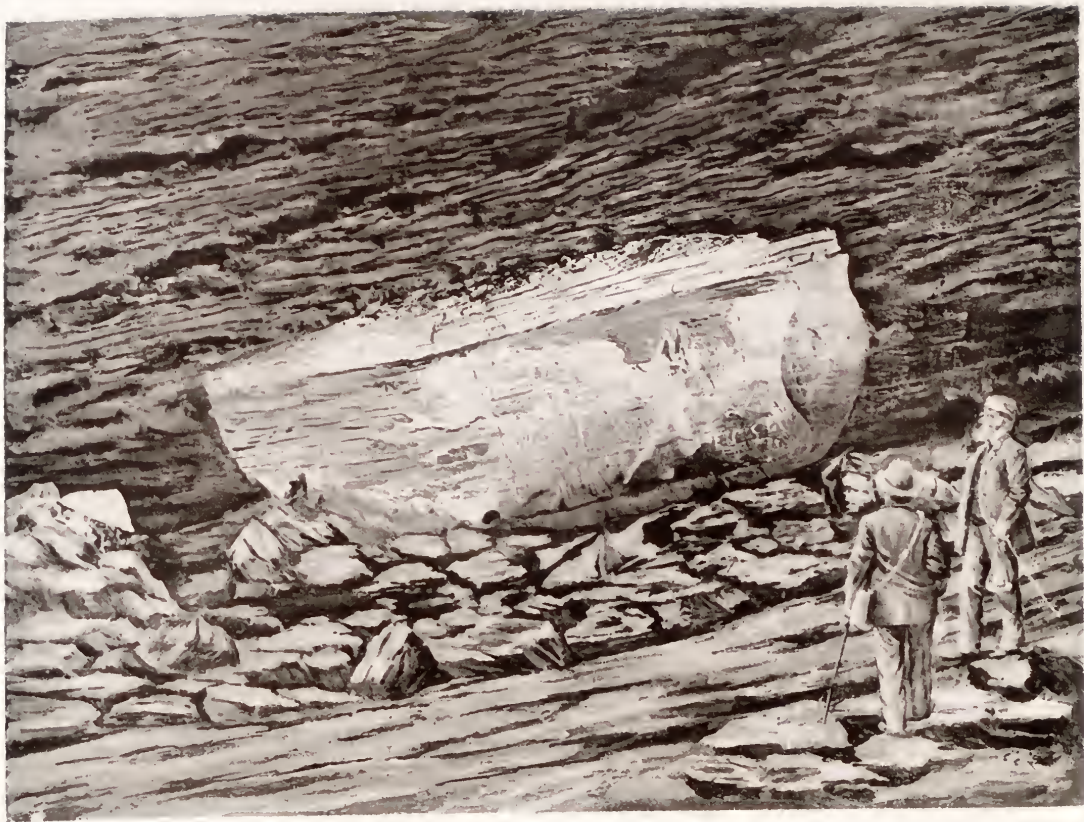


MARTHA WASHINGTON'S STATUE.

GIANT'S COFFIN.

This forms one of the great land marks of the Cave. It is a massive stone, resembling very much in outline the shape of a coffin, 40 feet long, 20 wide and 9 deep. There it stands, as if but a short time had elapsed since it fell; you look overhead to see, if there is no fear of another coming down, but your fears are allayed when the guide tells you that no stones have dropped during all the time visitors have been conducted along the various avenues. You are impressed with the immensity of this huge block of rock which certainly bears a marked resemblance to a great sarcophagus. It guards the entrance to some of the most wonderful and awe-inspiring chambers in the regions beyond the Echo River. Immediately behind it you are compelled to stop as you enter a low passage leading to the "deserted chambers." It is at this point, at some time in its history the nameless river, that did so much work in the cavern, left the main channel and worked its way through the "deserted chambers" and other places, to seek a lower level than that in which it had been flowing for a vast period of time.

Near here gravel is found which clearly indicates the direction of the river current, and here too the main Cave assumes greater width and height than in many other parts, and overhead many fantastic figures have been produced by the formation of black gypsum, which in some cases bear a close resemblance to animal objects, anteaters, bears etc., hence spoken of as the Cave Museum.



GIANT'S COFFIN.

BRIDGE OF SIGHS.

After passing behind the coffin, worming your way through the "Deserted Chambers," and proceeding some distance along a tortuous path, you arrive at a place where several fearful pits are found. The whole era is not over some 500 yards in diameter and yet there are no less than six pits to be seen, and nearly all 100 feet deep. Lately it has been discovered that several of these are connected by a great hall (Harrison) which is not likely to be much visited. One of these abysses called the "Bottomless Pit," about 25 feet in diameter and 105 feet deep, is spanned by the "Bridge of Sighs." Right over the pit is Shelby's Dome, 60 feet high: it is well worth looking at, as it is ornamented with scroll work, panels and carving in every imaginable form and lavished in the wildest profusion. In this abyss nature is still working away cutting at solid rock, for up out of the darkness you hear the sharp click, click of dropping water. As you stand on that bridge the guide holds over the great hole a burning torch, and when nearly burnt down, he hurls the flickering light into the darkness.

Watch the whizzing brand as it speeds its way down into the darkened abyss, beating back the darkness and giving you some idea of the immensity of that hole, during the few moments of its illumination. Before you saw it illumined, you stepped on the bridge with but little fear; but when you observe yourself suspended as it were mid-air, on that fragile structure, you are almost forced to heave a sigh, and hence the origin of the name Bridge of Sighs. The bottom of this can be reached by a path from River Hall, but most visitors are contented with the view from above.



BRIDGE OF SIGHS.

THE HUT.

After leaving the coffin, passing a short distance along the main cave, you turn quickly to the left going around the "Acute Angle" and proceeding some distance, you suddenly come upon the roofless stone-hut represented in the picture. Some sad associations are connected with it. It is one of 12 cottages, not all stone, built in 1843 for 15 consumptives who thought the cool, dry, invigorating air and uniform temperature of the Cave might enable them to overcome the icy grasp of the disease that had seized them. For 5 months they eked out an existence here, wandering about, trying to comfort each other in a region of awful silence and oppressive darkness. They even attempted to grow flowers, but these, like themselves needed sunlight and soon faded away. You see in the picture the sawhorse, once used by the inmates. At the end of 5 months one died, the rest longed to get out, and before they could reach the hotel, 3 more were added to the list of the dead; such was the result of that experiment which never was tried again. The inside of the "hut" is covered with cards; some photographs are pasted on the walls, and the floor is literally strewn with cards of the visitors.

It is a sad place to visit, if your mind for a moment begins to dwell on what transpired there in 1843, and yet we sometimes see people visit this gloomy monument, look around at the innumerable cards and pass some foolish remark, as if it had been a house of mirth, instead of sickness and death.



THE HUT.

STAR CHAMBER.

A little beyond the "Hut" of the last picture, you arrive at the "Star Chamber." This will be about a mile from the mouth. Here the Cave widens and forms a magnificent Chamber about 400 feet long, 70 wide and 60 high. At this point the experienced guide is expected to display to the best advantage his knowledge and skill.

You are told to sit upon some logs near by; he takes all your lanterns and proceeds to conceal himself behind some great rocks.

Left in impenetrable darkness, it seems as if banks of it were pressing in upon you. Such darkness you never experienced before, and have no desire that it should continue long.

The guide now directs you to look overhead, where to your surprise innumerable stars appear, for he has thrown up light upon the ceiling in such a way as to expose to your view crystals that have formed there; even a comet is amongst them. He now operates with his lantern so as to show you clouds stealing up the walls and crossing over the ceiling and skilfully displays midnight, starlight, and thunder cloud. He bids you good night, in a little while you hear in the distance a cock crowing, followed by the bleating of sheep. You look in the direction from which the sounds come; streaks of morning light seem moving along the wall of the Cave, lowing cattle are heard, the barking of dogs is evident and soon the cave becomes illumined as the guide, with several burning lamps, emerges from a hiding place he had reached by another avenue a short time after he left you, and from which he has been working his lamps to produce the appearance of dawning day.

His grand effort is over and his transformations finished; if he has been successful, the tourist will be ready to admit that the Star Chamber may well be considered one of the most wonderful spots in Mammoth Cave, and well fitted to show the skill and ability of a guide.



STAR CHAMBER.

BACON CHAMBER

Having rested in "Great Relief," after your somewhat laborious effort through the "Fat Man's Misery," you proceed to make your way along "River Hall," where after a short distance you observe to the right "Bacon Chamber," a low room, the ceiling of which has been curiously wrought and carved by the water till it assumed the grotesque appearance of to-day. The roof seems hung with bacon, hams, etc., and resembles a room in a pork packing establishment, more than a chamber cut out of rock by the action of water. Pause here for a moment and consider the surroundings. No ray of light, but the glimmer of your lamps and those of your companions, not a sound heard but the echo of your steps; nothing but darkness, silence and immensity; nothing to remind you of the outside world.

You are now about two miles from the entrance, and probably 250 feet below the surface. Away along the beautiful avenue "River Hall," you will soon reach the "Dead Sea," and the underground rivers. You are lost in wonder, as you linger here and think of what you passed, and what you are approaching, and what you are seeing in "Bacon Chamber." The suspended objects of interest are not stalactites, but have been formed by a part of the solid rock being worn away while roof and floor remained connected, but as time rolled on the lower rock of floor was cut off and a chamber formed with a grotesque ceiling, now seen, and comparatively smooth floor below.



BACON CHAMBER.

ECHO RIVER.

The picture represents a party of about six who have set sail for nearly a mile upon this mystic stream. This sail on the clear waters of that gloomy way is certainly the great sight and event of a visit to the Cave.

The scene here is one of more than passing notice when we consider the surroundings at the time it was taken. To get light sufficient to take a photograph in these realms of intense darkness, expensive chemicals require to be used. So bright is the light employed and the dazzling glare so strong that none of the occupants dare look around: they are looking away towards the archway. If perchance they catch a glimpse of their companions, each figure seems surrounded by a halo of golden light, and the entrance to Echo River illumined with dazzling splendor. It is silent, while the banks of impenetrable darkness are driven back for a few minutes, and art secures an impression of the scene which time will fail to efface from the minds of those who played a part in the scene before you. The picture taken, the boat moves over the waters clean as crystal. At certain points along the way the guide shows his skill in producing echos. Songs are sung, pistols fired, instruments played and paddles struck upon the water, while out from the dismal regions along this gloomy river come weird echoes of undescrivable sound. One feels as if this must be the abode of innumerable spirits. The very water as you look into it appears as if it might be the home of horrid creatures, ready to devour you, if perchance you fell in, and yet a few blind fish and crabs are all that represent animal life in these realms of endless night.



ECHO RIVER.

CORK SCREW.

Having made the Long Route and returned as far as the hall called Great Relic you are told by the guide that the way to the mouth may be considerably shortened by going up the "Corkscrew."

It begins here by your ascending some steps, and in a few moments you find yourself entering one of the most tortuous and complicated ways in all the Cave. If you look above you, nothing appears but a mass of confused rocks piled one above the other; here and there you observe openings; through one of these you are to pass. At certain portions, small ladders span spaces you cannot step over, and if for a moment you look down, you cannot discover the narrow way up which you came. In fact so intricate is this corkscrew route, for 240 feet, during which you have ascended a perpendicular height of 150 feet, that it looks more like a way for cats than human beings.

Breathless you at last reach the top and emerging from the narrow opening of the "Corkscrew," find yourself 20 or 30 feet above the floor of the main Cave. Gladly you pause to rest a moment and regain the breath, which has almost left you in the sustained effort to make your way through this intricate path. You clamber down as best you can, reach the path below and find yourself quite near the entrance of the cave, somewhat inclined to think that hereafter you will prefer not making a short cut through the Corkscrew.



CORK SCREW.

EXIT OF ECHO.

The Echo River, about 2 miles in the Cave and 328 feet below the surface, has always been a great mystery. If Green River, in the valley, is low, the Echo flows one direction, and if the Green is high, the current is in another. This led to the conclusion that some connection must exist between these two rivers. This was further established by throwing some light substance in the Echo, such as chaff, etc.; these were found to make their appearance in Green River. This representation of the cut is good, showing very distinctly the stratification of the rocks, and the manner in which plants help it to beautify the scene, together with the gloomy passage out of which the waters flow.

When Green River is high, the water can easily be perceived moving into the opening here, and when low the current is quite rapid towards the Green. This point of interest is quite a walk down the hill from the mouth of the Cave, and only a short way from Green River; but the way is beautiful and picturesque. It is something like a continuation of the beautiful path from the Hotel to the Cave.

Having reached it, the tourist finds himself surrounded by much that is suited to make the spot attractive, even if it were not the exit of that mysterious river we sailed upon nearly three miles under ground and 328 feet below surface. Lofty trees on every side, large vines swinging to and fro, with their foliage interlocked among that of the trees they have climbed for support, beautiful flowers too adding their beauty and perfume to the scene, together with the mystery that gathers around the dark archway near, makes the place of more than ordinary attraction.



EXIT OF ECHO RIVER.





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